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**Rezension zu: Harald Meller, François Bertemes, Hans-Rudolf Borkund y Roberto Risch (eds.). 1600-Kulturel- ler Umbruch im Schatten des Thera-Ausbruchs?/ 1600-Cultural change in the shadow of the Thera-Eruption? 4 Mitteldeutscher Archäologentag/ 4th Archaeological Conference of Central Germany (Halle, Saale 2011)**

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Así en el trabajo de J. Golden sobre la metalurgia calcolítica del Levante meridional (Cap. 21), el autor especula sobre la trascendencia social del empleo de cobre más o menos puro (pueblo llano) o de aleaciones complejas (élites), barajando una vez más los datos analíticos conocidos. Más interesante, desde nuestro punto de vista, es la aportación de Ch. P. Thornton a partir de nuevos hallazgos en la meseta iraní (Cap. 23). Los análisis de las escorias de Tepe Hissar, con escasas pérdidas de cobre, demuestran que la tecnología local se diferenciaba notoriamente de su contemporánea del Levante mediterráneo (Abu Matar, Shiquimim, etc.), rompiendo o al menos poniendo en un aprieto, el vigente paradigma que asume una gran pérdida de metal en las escorias tempranas de cobre. Científicamente nada se opone a que un paradigma sea sustituido por otro, pero en este caso parece que ambos coexisten (lo que quizás pusiera los pelos de punta a Kuhn, si es que en verdad fueran paradigmas). La coexistencia de dos modelos tecnológicos diferentes es evidente y posiblemente identifiquemos en el futuro otros más aunque, por ejemplo, en la Península Ibérica, hasta donde sabemos, la primera metalurgia sigue el modelo levantino (sólo que con casi dos mil años de retraso). El *quid* de la cuestión está en determinar la trascendencia social y económica de la tecnología de Tepe Hissar y otros sitios iraníes porque, según parece, tanto el Levante como la meseta iraní muestran rasgos sociales similares. Con ello el modelo tecnológico en sí no sería, en nuestra opinión, el motor principal de la evolución social; simplemente estaríamos ante dos soluciones tecnológicas distintas para el mismo requerimiento económico-social: la obtención de cobre. Bien pudiera darse una inversión de factores, de modo que no fuera la tecnología la que modeló la sociedad sino ésta la que demandó y forzó cambios tecnológicos. Extrapolando, las consecuencias del posible cambio de magnitud en la importancia social de un rasgo metalúrgico nos alerta sobre los riesgos y caducidad de ciertos modelos en exceso especulativos. Por razón de vecindad, la revisión y planteamientos de A. Dolfini acerca de la metalurgia en el Mediterráneo central (Cap. 18) tiene su trascendencia al aglutinar y ordenar un panorama su tanto disperso en artículos publicados en los últimos años que estudian escorias, minería y metales del IV y III milenios a.C. de la Península Itálica (Artioli, Pearce, Bourgarit, Cierny y el propio Dolfini, entre otros). Nos parece suficientemente bien asentada la idea de una primera metalurgia basada en la explotación de los depósitos minerales alpinos de sulfuros y *fahlerz* (no parece que hubiera otros a mano). Pero nos gustaría alguna aclaración que, desde el punto de vista físico-químico, es pertinente cuando nos estamos refiriendo a esta metalurgia temprana: no se trataría del beneficio de sulfuros en pureza (que requieren procesos metalúrgicos complejos al

parece sin explorar hasta el Bronce Final) sino de los afloramientos meteorizados donde junto a los sulfuros yacen sus formas oxidadas, resultando mezclas naturales de fácil reducción. El libro incluye atractivos estudios sobre América, Asia y África, contribuyendo a la construcción de una obra de consulta imprescindible para quienes nos aproximamos a la Arqueometalurgia, tanto desde la perspectiva tecnológica como de sus implicaciones sociales y económicas. Uno podrá estar de acuerdo o no con determinadas hipótesis pero ello no resta valor al conjunto de la obra.

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Harald Meller, François Bertemes, Hans-Rudolf Borkund y Roberto Risch (eds.). *1600-Kultureller Umbruch im Schatten des Thera-Ausbruchs?/ 1600-Cultural change in the shadow of the Thera-Eruption?* 4 Mitteldeutscher Archäologentag/ 4<sup>th</sup> Archaeological Conference of Central Germany (Halle, Saale 2011). Tagungen des Landesmuseums für Vorgeschichte Halle 9. Halle (Saale), 2013, 616 pp., ils. ISBN: 978-3-944507-00-2; ISSN: 1867-4402.

Can single major events of catastrophic and climatic impact influence the course of history? If yes, how far do humans depend on these changes of their natural environment? And further, how do they react to them, by creating new ecological, societal and economical –that is: cultural– settings?

Putting the focus on a specific and paradigmatic “major catastrophic event” of European prehistory – the Thera/Santorini volcanic eruption of c. 1600 BC – the Halle conference of 2011 addressed these topics in a broad interdisciplinary perspective, including natural and archaeological sciences, investigating factual, methodical, and epistemological challenges, and ranging from the locus of the event in the central Aegean Sea to the outskirts of Europe in the North and West.

The results of this conference, 40 contributions altogether, are gathered in a well documented and beautifully presented, heavy proceedings volume of 616 pages. Bilingual (D/E) summaries, carefully edited texts, high quality full size color images, and extended bibliographies make this volume the new key reference for any scholars interested in or working on the Santorini eruption and its consequences.

‘Natural events and the fate of humanity’: Since a lot of ink has already been spent on the topic addressed,

one might ask: why this conference, after all? The editors answer the question by stressing three points: that there has been a long lasting debate on the Thera case, and thus a need to sum up the actual evidence on the topic (1), that it can be seen as an archetype of a human-ecological setting, thus triggering again and again new debates (2), and that it represents an unique ground for interdisciplinary approaches, bringing together natural and cultural sciences (3). According to the editors, a core question led through the conference: How do eco-dynamic processes (i.e. catastrophic events) affect human behavior (i.e. behavioral responses)? One can add a few underlying observations to this, e.g. on the long lasting debate over high and low chronologies in the Aegean (and in particular the Thera eruption), on the effects of the eruption on regional (i.e. Aegean) and supra-regional (i.e. south European) cultural developments, and on its global impacts on environment and society (some of which recorded since the 1980ies). The primary goal of the proceedings volume then is, as expressed by the editors, “a historical cartography of Europe and the Mediterranean [around 1600 BC] which portrays the social dynamic of the different regions” (p. 12, fig. 2).

The volume is not intended as an additional contribution to the issues of Aegean and Bronze Age chronology; however, one of its starting points is an interesting observation on European chronology: over wide areas of the Mediterranean as well as of Atlantic and Continental Europe there is a clear divide between archaeological traditions before and after 1600 BC (fig. 1a-b). Could this historical transition (or break?) be related to the Thera eruption and its consequences? The attempt then was “to go beyond or to overcome the normal portrayal of socio-ecological processes or interpretive narratives...” and to move towards the evaluation of changes in the development of European prehistory, “both in its spatial and chronological amplitude, as well as the societal, economical, and ecological contexts” (p. 12). We propose now to thumb through the volume, commenting on some of the contributions and the most prominent statements. The corresponding authors will be named in brackets.

‘Scientific approaches to the Thera eruption...’ The chronological positioning of the Thera catastrophe at 1627-1600 cal. BC ( $2\sigma$ ) can be considered secure, based on local radiocarbon dates and far-reaching marker signals in many different proxies (Friedrich, Baillie). Seen the nature of the event, the coordinated evacuation of the town of Akrotiri on Santorini appears quite astonishing (Michailidou). Various effects of the Thera eruption have been identified in the nearer and farther surroundings of the island (Siart and Eitel), among others tsunamis (Openheimer, Bertemes), and population movements to Crete. Similar large Plinian eruptions, such as the Avelino (Somma Vesuvius) in 1995-1880 cal. BC in

Campania, moreover offer interesting backgrounds for comparison (Orsi *et al.*, Di Lorenzo *et al.*).

The Thera eruption provoked the end of second palace period in Crete (Jung), and triggered with this, as can be argued, the creation of new social and ideological structures (Neuser). Did this change of world views shift ancient societies from traditional “nature religions” to “culture religions” with human-like gods? Epistemologically, this is may be the most thrilling question raised in the volume... Interestingly, no concrete allusions to the catastrophe are to be found in ancient Greek literature; nor incidentally in Egypt, where for the Hyksos second intermediate period no historiography is to be expected (Risch and Meller). The end of palatial society, in any case, occurred only 80-90 years after the Thera eruption, and probably due to internal socio-political conflicts (Niemeier).

‘...and its (possible) consequences’: Could the eruption have triggered a Rapid Climate Change, possibly with almost global impact? Chronological and causal relationships seem very difficult to establish on this topic (Lull *et al.*). There is good evidence that the 16<sup>th</sup> century was climatically instable in the Alpine region, as attested by dendro-ecology (Billamboz) and tectonic activity (Patzelt), but this was probably or possibly not related to Thera eruption. However, subjectively, the two events might have been linked in the appraisal of people, well beyond the Aegean world, to the East and West of Europe. Such a “linkage of worlds” can be seen in the motifs and materials used for the Nebra disc (Meller), as well as in other technical innovations of the mid-second millennium (Darvill, Filipp).

In this perspective, Risch and Meller discuss economical, social, and ideological transformations in Europe around 1600 BC in four scenarios: continuity, growth, collapse, and new formation (p. 610, tab. 1). Continuous development appears in particular on the central and western Mediterranean islands, but also southern Germany (Innenhofer). Dynamic changes are to be seen in Greece and the Peloponnes (Pruckner), eventually leading to the Mycenaean proto-states, or even more so in Anatolia with the raise of the Hittite state. In circum-alpine Europe, fortified settlements already starting around 1800/1700 BC (Vanzetti, Primas, Krenn-Leeb) seem to remain in a stable system until c. 1500 BC.

‘Did these dynamic regions profit from the decline or collapse of others in economic or political terms?’: Collapsing structures can be recognized in Crete, or in the El Argar world and its periphery (Lull *et al.*, Hernandez), as well as in particular along the Danube and in the Carpathian basin, where the decline is well attested during the Koszider horizon of the 16<sup>th</sup> century. Several contributions deal with this area (Batora, Fischl *et al.*, Metzner-Nebelsick). Again, a similar evolution can be

seen in the Aunjetitz area, with a strong relationship to the control of resources (copper, gold, salt, amber) through evident hierarchies, resp. the collapse of this control in the 16<sup>th</sup> century (Meller, Zich). Whether climate played a role is still a matter of debate.

Altogether, and seen the vast mosaic of – though largely contemporaneous – changes throughout Europe, a primarily climatic cause for the economic and social transformations in the mid-second millennium seems rather difficult to sustain, with the exception of the Aegean region itself. But –and this is the thrilling conclusion of the volume– the mere temporal coincidence of the two events, the eruption and the climatic deterioration, and the lack of suitable explanations for the unforeseen phenomena by the ruling elites, would have lead to social revolt and contest of existing hierarchies. And the reasons for this, again, is –if we follow Risch and Meller– to be searched for in increasing social communication and mobility throughout Bronze Age Europe. Whether this moment really brought by the fundamental divide in socio-political organization between an eastern sphere of state-like structures, and a western sphere of non-institutionalized power structures, as argued by the editors of the volume, remains to be followed up.

‘A beautiful volume’: There is, of course, no way and place to discuss all the 40 contributions to the volume extensively in this review. However, we feel a need to conclude with some remarks on the relationship between “cause” and “observation”: exploratory research is bound to evidence observations, but moreover, these observations need to be interpreted in a meaningful way. Whereas it is absolutely legitimate to observe that the deposition of the Nebra disc and the Thera eruption correlate in chronological terms, to evidence a causal relationship between the two, however, is quite a different matter... The organizers of the Halle conference and editors of the proceedings volume have taken up this challenge, with an impressive array of quantitative and qualitative evidence, and within an interpretive framework that goes well beyond the narratives that we have read so far. Some maybe will find their conclusions too complementary, too far-reaching, or too “global” in thinking –but all will be impressed by the innovative approaches, the wide contexts addresses, and the quality of the discussions.

Some statistics to end with: 24 papers are written in English, the remaining 16 in German; the topics of the science section range from volcanism to flood events and from geoscience to dendrology, those of the archaeology section from Egypt to the British Isles and from the Carpathian to Iberia, with a focus on the Aegean and central Europe. If we have a regret, then that the final discussion by Roberto Risch and Harald Meller (pp. 597-613), an excellent summary of the outcomes of the conference and the perspectives for future research, has not been translated to English, in

order to make it more accessible to an international community. A little *Wermutstropfen* (drop of bitterness) in a vast pool of excellent research, thrilling debates, and mind-opening thoughts!

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Louise Steel. *Materiality and Consumption in the Bronze Age Mediterranean*. Routledge Studies in Archaeology, Routledge, Taylor and Francis Group. Nueva York y Londres, 2013, 264 pp., figs. n., índice analítico. ISBN: 978-0-415-53734-6.

Louise Steel is Senior Lecturer in Mediterranean Archaeology at the University of Wales, Trinity Saint David. She is the author of an earlier book (Steel 2004), as well as numerous articles in journals and conference publications. The earlier book has come to be regarded as something of a textbook, and is very comprehensive. The new book is a shorter study, dealing with the entire Mediterranean world in the 2<sup>nd</sup> millennium BC, including Cyprus and the Levant. It is by no means comprehensive, although it is remarkably detailed in the topics it chooses to include. It is also much more theoretical than the earlier work, full of references to agency, enchantment, hybridization, entanglement and habitus, and the array of vocabulary that now dominates the world of social archaeology. The goal of the book is set out at its end, on the first page of its conclusions (p. 225): “When handling an object that once belonged to someone else it is impossible not to wonder about where it came from, what it was used for, who made it, when it was made and what the people who made and used it were like. The part of the human psyche that craves answers to these questions is, in its most basic form, the driving force behind this book”.

It could be argued, of course, that what she describes is the driving force behind all archaeology, but her description does have a special resonance for this book. The arguments presented here are devoted to the basic proposition that what Bronze Age archaeology needs to do is to take its famous finds off the dusty shelves of the museum and ‘put them to work’, to go beyond the inventory and the catalogue in order to understand what the objects meant to their creators and what we can say about the skilled craftsmen who made them. As Steel would have it, she wants to recreate “The Social Life of Things” (p. 226). Anyone who has read through the dreary pages of all too many final excavation reports can only applaud. Surely there has to be more to archaeology than what we are